Finally, there are also critically important water "uses" in the stream—ecological flows, recreation, and waste assimilation.

Dr. Peter H. Gleick, an internationally recognized water expert and president of the Pacific Institute, outlines an alternative or "soft path" solution. "What is required is a 'soft path,' one that continues to rely on carefully planned and managed centralized infrastructure but complements it with small-scale decentralized facilities." The soft path takes into consideration convenience, cost-effectiveness, and social acceptability. Gleick's estimates project that urban water use could be reduced by 33%. In his study "Waste Not, Want Not," Gleick examined California's urban residential, commercial, institutional, and industrial water uses.

More cautious estimates predict that conservation could reduce demand by as much as 25%. Based on these estimates, conservation efforts alone could reduce NC's daily municipal, farming, and industrial water use from 1,835 mgd to 1,376 mgd (from the USGS 2002 data). Overall, conservation could reduce NC's total daily water use from 11,349 mgd to 10,890 mgd. In some locations this reduction in use could significantly delay or even eliminate the need to develop a new water source. In essence, the new source is created by improved efficiency.

But these are numbers from the year 2000. As the population grows and the variability in flows increases due to climate change and other factors, demand will rise and supply will be less certain. The critical questions in establishing a water budget are: How fast will demand rise? (answer is driven by how efficient the water use is). Will there be adequate supply? (answer varies by place and time and is knowable only through hydrologic modeling). In places where demand will outpace supply, how will North Carolina deal with the resulting conflict? To answer this last question, the water allocation study looked at the existing laws, policies, and institutions in North Carolina that affect water allocation.

Current regulatory processes: key findings

Capacity use area program

North Carolina's capacity use area (CUA) program is of central interest to the Water Allocation Study because it provides actual examples of what happens when the state takes a more rigorous approach to water allocation than under the traditional riparian rights, common law approach. In particular, North Carolina has required withdrawal permits for significant groundwater users in its capacity use area. It has also begun a long-term program of mandated reductions in withdrawals. Finally, North Carolina's current capacity use rules allow trading of water allocations, thus providing potential insight into the ability of water markets or quasi-markets to work in a riparian rights setting.

The Capacity Use Area program is currently applied to the Central Coastal Plain (CCP), a rural region in the eastern third of North Carolina that is dotted with small towns. A group of formations collectively known as the Cretaceous aquifers supply the vast majority of water to communities in the CCP. The aquifers have had a reasonable yield and produce high-quality water that generally requires little, if any, treatment, resulting in an inexpensive water supply.

As population and water demand have increased in the CCP, water levels within the aquifer have been declining